

HOW TO IDENTIFY MALLOWS NATURALISED IN CANTERBURY

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Mallows form a conspicuous part of our roadside and wasteland weed flora, particularly in late summer when fewer naturalised plants are in flower. Within the groups which are loosely referred to as mallows, four species of Lavatera, five species of Malva and the one species of Modiola have been collected in Canterbury. The species of Malva, along with Lavatera cretica, are often confused as they are rather variable in flower size and colour, leaf shape, and also in habit. Several species of Malva can often be found growing together; all four common species occur on roadsides between DSIR, Lincoln, and Lincoln Village. Ripe fruits of Lavatera and Malva are made up of many, small, 1-seeded segments (mericarps) which separate at maturity - these provide many good characters for identification. The size of petals relative to the calyx is also important, as is the shape, size and fusion of the epicalyx. The epicalyx is a whorl of 3 fused or free bracts surrounding the calyx. In all other wild N.Z. genera of the Malvaceae there is either no epicalyx (e.g. Plagianthus, Hoheria) or there are 5 to 16 epicalyx segments (e.g. Hibiscus).

Here I provide a key to, and notes on, all of the Canterbury mallows and illustrate critical features. Two further species are naturalised in N.Z., but are not known from Canterbury. These are: Lavatera trimestris, distinguished by the expanded central axis of the fruit which completely covers the mericarps; and Malva moschata, which has upper stem leaves almost divided to the base into pinnatifid lobes, and densely hairy mericarps.

KEY TO MALLOWS NATURALISED IN CANTERBURY

1. Epicalyx segments united at base .....2  
    Epicalyx segments free .....8
2. Petals orange to reddish orange; fruit composed of 2-3-seeded,  
    awned, dehiscent cells ..... Modiola caroliniana  
    Petals white, pink, lilac to reddish or bluish purple; fruit  
    composed of 1-seeded, unawned, indehiscent mericarps .....3

3. Petals 3-5 mm long, about equalling calyx; edges of mericarps slightly winged and sometimes toothed. .... Malva parviflora  
Petals 6-30 mm long, at least twice length of calyx; edges of mericarps rounded or sharply angled, but not winged .....4
4. Mericarps covered in fine even hairs, 12-15 per fruit, smooth on back ..... Malva neglecta  
Mericarps glabrous or with few scattered hairs, mostly fewer than 12 per fruit, weakly or strongly reticulately veined on back .....5
5. Edges of mericarps sharply angled; mericarps strongly reticulately veined on back .....6  
Edges of mericarps rounded; mericarps almost smooth or faintly ribbed on back .....7
6. Petals 6-10 mm long; calyx-tube almost glabrous at base ..... Malva nicaeensis  
Petals 12-30 mm long; calyx-tube moderately to densely hairy at base ..... Malva sylvestris
7. Epicalyx segments ovate to broadly ovate, usually slightly fused at base; calyx-teeth acuminate ..... Lavatera cretica  
Epicalyx segments linear, completely free; calyx-teeth acute ..... Malva verticillata
8. Mericarps 18-25 per fruit; flowers solitary .... Lavatera olbia  
Mericarps 6-15 per fruit; flowers occasionally solitary, but usually in clusters of 2-10 .....9
9. Epicalyx segments longer than calyx, enlarged and spreading at fruiting ..... Lavatera arborea  
Epicalyx segments shorter than calyx, almost unchanged at fruiting .....10
10. Woody much-branched shrub; calyx long-tubular; petals 30-40 mm long ..... Lavatera assurgentiflora  
Stout annual or biennial herb, often woody at base; calyx campanulate; petals 8-30 mm long .....11
11. Edges of mericarps rounded; mericarps smooth or faintly ribbed on back; calyx-teeth acuminate ..... Lavatera cretica  
Edges of mericarps sharply angled; mericarps strongly reticulately veined on back; calyx-teeth acute ..... Malva sylvestris

NOTES

LAVATERA

1. L. arborea

A stout biennial, usually with a single central stem up to 2, or even 3, metres high. Petals lilac to deep pink with purple or red veins and marking toward base. Easily distinguished by the large expanded epicalyx of the fruit (fig.).

Tree mallow is a European and North African species found in the North, South and Chatham Islands. It usually grows in waste areas at coastal sites, but sometimes occurs inland. In Canterbury it is found in coastal areas, around Banks Peninsula, and in and around Christchurch.

2. L. assurgentiflora

This is the only truly woody mallow well naturalised in New Zealand; the petals are magenta with darker veins and the long-tubular calyx is distinctive (fig.).

Californian mallow is native to southern California and in New Zealand is confined to coastal sites from Marlborough to Otago. It is established locally in Sumner and surrounding areas.

3. L. cretica

A branched annual or biennial herb up to 2 metres high but usually smaller. Petals lilac or pink, with darker veins. Often confused with *Malva sylvestris* from which it is distinguished by the acuminate calyx-teeth (fig.) and round-edged, smooth-backed mericarps (fig.). Most species of Malva are distinguished from Lavatera by the free epicalyx segments (fused in species of Lavatera), but this character does not work well for identifying L. cretica and M. sylvestris.

Cretan mallow is native to Europe, North Africa and Asia Minor. In New Zealand it is found throughout the North Island and in the South Island as far south as North Otago. It grows in waste places and coastal sites and is well-established around Christchurch and Banks Peninsula.

4. L. olbia

A woody shrub up to 2 metres high. Petals deep pink. Distinguished by the numerous mericarps in each fruit (18 to 25).

Tree avatera is native to the Mediterranean and is cultivated as an ornamental. It is only known in N.Z. from one site in the wild - a roadside between Rolleston and Burnham where the cultivar 'Rosea' was collected in 1964.

MALVA

1. M. neglecta

A procumbent to ascending herb. Petals white to lilac with darker veins. The smooth-backed mericarps clothed in short hairs are distinctive (fig.). At flowering it can be told from M. nicaeensis by the greater number of ovary segments enclosed within the calyx (8-10 in M. nicaeensis, 12-15 in M. neglecta).

Dwarf mallow is native to Europe, Asia and North Africa. It is naturalised in the North and South Islands in waste places, pasture, cultivated land and riverbeds, and is common in lowland Canterbury.

2. M. nicaeensis

A procumbent, ascending or erect herb. Petals pale lilac or pink with darker veins and tips. The mericarps are strongly veined on the back (fig.) and become glabrous as they mature. The petals are longer than in M. parviflora but shorter than in small-flowered forms of M. sylvestris. The flowers are similar to those shown for M. neglecta (fig.).

French mallow is native to the Mediterranean and west Asia. It is common in the North Island and occurs as far south as North Otago in the South Island. It grows in waste places and coastal areas and is established in North Canterbury and in and around Christchurch.

3. M. parviflora

A procumbent or erect herb. Petals white, pale mauve or pink toward tips. Distinguished by the small flowers (fig.), winged edges of the mericarps (fig.) and the enlarged spreading calyx at fruiting (fig.). The small-flowered mallow is a native of Europe and Asia. It occurs throughout the North and South Islands in waste places, cultiva-

ted land, coastal areas and riverbeds. It is common in and around Christchurch, on Banks Peninsula, and in other areas of lowland Canterbury.

4. M. sylvestris

An ascending or erect herb, often over 1 metre in height but very variable in habit and sometimes growing close to the ground. Petals vary in colour from deep pink through to reddish or bluish purple, usually with darker markings. M. sylvestris is often confused with Lavatera cretica from which it is distinguished by the square edged, reticulately veined mericarps (fig.), and actue calyx-teeth (fig.). Small-flowered plants of M. sylvestris may resemble M. nicaeensis but can be recognised by the slightly longer petals, longer fruiting pedicels and hairy base of the calyx-tube.

Large-flowered mallow is native to Europe, North Africa and Asia. It occurs throughout the North and South Islands, and on the Chatham Islands in waste places, cultivated land, and pasture. It is very common in lowland Canterbury and often occurs with other species of Malva.

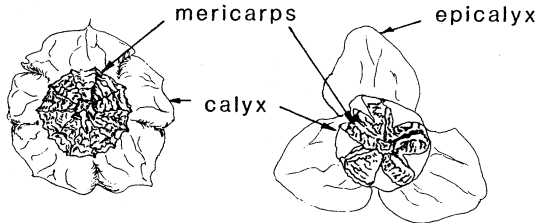
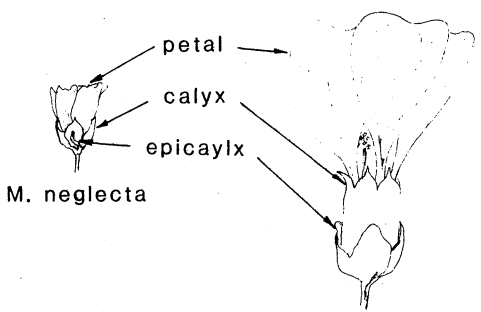
5. M. verticillata

This species is distinguished by the smooth-back round-edged mericarps and narrow, free epicalyx-segments. It is known in N.Z. from only one early collection, that from Christchurch. Early records of this species result from misidentification of Malva parviflora and Lavatera cretica.

MODIOLA

1. M. caroliniana

A procumbent herb, rooting along stems and sometimes ascending at tips. Petals are 3-7 mm long, bright orange to reddish orange, but they usually become purple when dried which leads to confusion with other mallows. Unlike all species of Malva and Lavatera the segments of the fruit are dehiscent, 2-3-seeded and have a short slender dorsal awn. Creeping mallow is native to tropical and warm temperate North America. It is common in the North Island, and locally established in Nelson, Marlborough and in and around Christchurch. It is a weed of waste places, coastal areas, lawns and pastures.



Fruits (x2)



*M. sylvestris*

*L. assurgentiflora*



*M. parviflora*



*M. neglecta*      *M. nicaeensis*      *M. parviflora*

Petals, Calyx and Epicalyx (natural size)



*M. sylvestris*



*L. cretica*

Outline of calyx-teeth (x5)



*M. sylvestris*



*L. cretica*



*Modiola caroliniana*

Mericarps (x10)